

WHAT IS CLAIMED IS:

56a) 1. A vibration preventing damper ^{(4) [5]} forming method for supporting in a vibration proof manner a mechanical chassis provided with a non-contact reading mechanism for a disc-like recording medium in a floating manner within a casing comprising the steps of:

forming, of a resin, an opening side end portion of a damper housing having a holder portion in the form of a container opened at one end for holding a support shaft provided in one of the casing and a mechanical chassis and an elastic wall portion that may reduce a floating movement of a support shaft due to elastic deformation in three-dimensional directions and a vibration preventing damper forming portion of any one of the casing and the mechanical chassis, mounting the damper housing to said vibration damper forming portion by the fixture of the resin to thereby integrally form the vibration preventing damper with the any one of the casing and the mechanical chassis.

2nd emb. 2. A mechanical chassis including a non-contact reading mechanism for a disc-like recording medium and said vibration preventing damper formed in accordance with the forming method as recited in claim 1 on a chassis supported in a floating condition through the vibration preventing damper within the casing, further comprising a resin portion at the vibration preventing damper forming portion of the chassis, wherein the opening side end portion made of a resin material of the damper housing provided with the holder

portion in the form of the container opened at one end for inserting the support shaft provided in the casing and an elastic wall portion for reducing the floating movement of the support shaft due to elastic deformation in three-dimensional directions is fixed to said resin portion, and said vibration preventing damper is formed integrally with said chassis.

3. A mechanical chassis according to claim 2, wherein a through hole for communicating air between an inside and an outside of the vibration preventing damper is formed in any portion of the vibration preventing damper forming portion in at least one of the vibration preventing damper and the chassis.

4. A mechanical chassis according to claim 2, wherein the holder portion of the damper housing is formed as a bottomed agitating shaft portion for holding the inserted support shaft provided in the casing and viscous fluid for giving an agitating resistance due to viscous fluidization to the agitating shaft portion that moves in accordance with the movement of the support shaft is provided within an interior of the vibration preventing damper.

Sub 3. 5. A mechanical chassis according to any one of claims 2 to 4, wherein a ^{resin} through hole is formed in the vibration preventing damper forming portion of a resin chassis, the opening side end portion of the damper housing is fixed to a hole edge of the through hole on one surface side of the resin chassis, and a lid member made of a resin material for closing the through hole is fixed to

the hole edge of the through hole in the other surface side of the resin chassis.

6. A mechanical chassis according to any one of claims 2 to 4, wherein a through hole is formed in the vibration preventing damper forming portion in one of a metal portion of a chassis and a metal chassis, a resin portion for covering a hole edge of the through hole with both front and rear surfaces of the chassis,

the opening side end portion of the damper housing is fixed to said resin portion on one side surface of the chassis and a lid member made of a resin material is fixed to said resin portion on the other side surface of the chassis.

7. A mechanical chassis according to any one of claims 2 to 4, wherein a through hole through which the damper housing may be inserted is provided in the vibration preventing damper forming portion of a resin chassis, an outward flange is provided on the opening side end portion of the damper housing,

under the condition that the one side surface of the outward flange comes in contact with a hole edge of the through hole, the damper housing is fixed to the resin chassis and a lid member made of a resin material for closing the opening side end portion of the damper housing is fixed to the other side surface of the outward flange.

8. A mechanical chassis according to any one of claims 2 to 4, wherein a through hole through which the damper housing may be

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inserted is provided in the vibration preventing damper forming portion in one of a metal portion of a chassis and a metal chassis, a resin portion of said through hole is provided in a hole edge of said through hole, an outward flange is provided in the damper housing,

under the condition that the one side surface of the outward flange comes in contact with one of a hole edge of the through hole and the resin portion on one side surface of the chassis, the damper housing is fixed to the resin portion and a lid member made of a resin material for closing the opening side end portion of the damper housing is fixed to the other side surface of the outward flange.

9. A mechanical chassis according to any one of claims 2 to 4, wherein the chassis as a whole is formed of a resin material or a metal material.

Sub 10. A mechanical chassis according to claim 9, wherein a through hole is provided in the vibration preventing damper forming portion of a resin chassis,

the opening side end portion of the damper housing is fixed to a hole edge of the through hole on one side surface of the resin chassis, and a lid member made of a resin material for closing the through hole is fixed to the hole edge of the through hole on the other side surface of the resin chassis.

11. A mechanical chassis according to claim 9, wherein a through hole is formed in the vibration preventing damper forming portion

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in one of a metal portion of a chassis and a metal chassis, a resin portion for covering a hole edge of the through hole with both front and rear surfaces of the chassis,

the opening side end portion of the damper housing is fixed to said resin portion on one side surface of the chassis and a lid member made of a resin material is fixed to said resin portion on the other side surface of the chassis.

12. A mechanical chassis according to claim 9, wherein a through hole through which the damper housing may be inserted is provided in the vibration preventing damper forming portion of a resin chassis, an outward flange is provided on the opening side end portion of the damper housing,

under the condition that the one side surface of the outward flange comes in contact with a hole edge of the through hole, the damper housing is fixed to the resin chassis and a lid member made of a resin material for closing the opening side end portion of the damper housing is fixed to the other side surface of the outward flange.

13. A mechanical chassis according to claim 9, wherein a through hole through which the damper housing may be inserted is provided in the vibration preventing damper forming portion in one of a metal portion of a chassis and a metal chassis, a resin portion of said through hole is provided in a hole edge of said through hole, an outward flange is provided in the damper housing,

under the condition that the one side surface of the outward flange comes in contact with one of a hole edge of the through hole and the resin portion on one side surface of the chassis, the damper housing is fixed to the resin portion and a lid member made of a resin material for closing the opening side end portion of the damper housing is fixed to the other side surface of the outward flange.

14. A mechanical chassis according to any one of claims 2 to 4, wherein the chassis comprises a metal portion in which said non-contact reading mechanism is provided and a resin portion in which a vibration preventing damper forming portion is included and is formed integrally with said metal portion.

15. A mechanical chassis according to claim 14, wherein a through hole is provided in the vibration preventing damper forming portion of a resin portion of said chassis,

the opening side end portion of the damper housing is fixed to a hole edge of the through hole on one side surface of the chassis, and a lid member made of a resin material for closing the through hole is fixed to the hole edge of the through hole on the other side surface of the resin chassis.

16. A mechanical chassis according to claim 14, wherein a through hole through which the damper housing may be inserted is provided in the vibration preventing damper forming portion of a resin portion of said chassis, an outward flange is provided on the opening side end portion of the damper housing,

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under the condition that the one side surface of the outward flange comes in contact with a hole edge of the through hole, the damper housing is fixed to said chassis and a lid member made of a resin material for closing the opening side end portion of the damper housing is fixed to the other side surface of the outward flange.

Adel

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